

**MSS SP-71-2011**

# Gray Iron Swing Check Valves, Flanged and Threaded Ends

Standard Practice  
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Substantive changes in this 2011 edition are “flagged” by parallel bars as shown on the margins of this paragraph. The specific detail of the change may be determined by comparing the material flagged with that in the previous edition.

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## **FOREWORD**

The 1997 edition of MSS SP-71, in addition to various editorial changes, includes changes to: 1) provide a more complete metric version for reference use; 2) delete the Class 800 Pressure-Temperature rating; and 3) expand Annex C to include ISO references.

The 2005 edition of MSS SP-71 added minimum wall requirements that were previously omitted. The addition of the minimum wall thickness requirements are necessary to qualify the valves for Class 125 and Class 250 pressure-temperature designation/rating as defined in ASME B16.1 and Table 1 of this MSS Standard Practice. This edition also deleted the PN designations, which were easily confused with designations in international standards that are based on other material specifications and pressure-temperature rating procedures. ISO references were deleted from Annex C.

This 2011 edition of MSS SP-71, in addition to various editorial and formatting updates, clarifies the leakage rate in Section 7.4 and updates the organizations and references in Annex C.



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## **ERRATA SHEET FOR MSS SP-71-2011** *(Gray Iron Swing Check Valves, Flanged and Threaded Ends)*

February 22, 2013

This “normative” errata correction applies only to MSS SP-71-2011 edition (current), involving *Gray Iron Swing Check Valves, Flanged and Threaded Ends*.

### **NOTE THE FOLLOWING CORRECTIONS:**

#### **Section 4 Materials**

**Page 2 (right-side column), Section 4.1.5 Bolting (only) and 4.1.6 Glands (only).** Both of these sections (with their specific heading only) should be deleted. This correction matches previous editions.

\* Note that **Section 4.1.5 Side Plugs** and **Section 4.1.6 Bolting** remain unchanged and in force.

This Errata Sheet has been inserted into the Standard Practice. For those who obtained the Standard Practice before the February 22, 2013 publication date indicated above or otherwise do not already have this information, please include this Errata Sheet within your existing 2011 edition of the Standard Practice.

Future edition of this Standard Practice will include this corrected information.

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## GRAY IRON SWING CHECK VALVES, FLANGED AND THREADED ENDS

### 1. SCOPE

1.1 This Standard Practice covers gray iron swing check valves with flanged and threaded ends for general purpose service. The use of swing check valves in steeply inclined or vertical lines requires special consideration.

1.2 This Standard Practice also includes, directly or by reference, stipulations on chemical and mechanical properties of materials and dimensions of end connections in common use.

### 2. VALVE DESIGNATION, CLASSES, AND SIZES

2.1 **Valve Types** Valve types covered herein are illustrated in Figures A1 through A4 in Annex A<sup>(1)</sup>. Swing check valves, of the full waterway type when fully opened, shall have a flow area of not less than the area of a circle having a diameter equal to the nominal pipe size. The clearway type shall allow the disc assembly to swing above the waterway when fully opened.

Type I — Full Waterway, Metal-to-Metal Seat (*See Figure A1*)

Type II — Full Waterway, Composition-to-Metal Seat (*See Figure A2*)

Type III — Clear Waterway, Metal-to-Metal Seat (*See Figure A3*)

Type IV — Clear Waterway, Composition-to-Metal Seat (*See Figure A4*)

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Note: (1) The figures in Annex A are for the purpose of illustration and nomenclature only. They are not intended to exclude any design meeting this Standard Practice.

### 2.2 *Trims*

- a) Copper Alloy
- b) Ferrous
- c) Stainless Steel
- d) Resilient or Non-Metallic

### 2.3 *Classes*

- a) Class 125
- b) Class 250

### 2.4 *Sizes*

- a)  $2 \leq \text{NPS} \leq 24$  flanged end
- b)  $2 \leq \text{NPS} \leq 6$  threaded end

### 3. PRESSURE-TEMPERATURE RATINGS

3.1 Pressure-temperature ratings for the various classes of valves are shown in Table 1. SI (metric) units are shown in Table B1 of Annex B. The ratings specified are for valves with metal-to-metal seating surfaces. Pressure-temperature ratings for valves with non-metallic seat materials must be limited to reflect the physical characteristics of these materials at each temperature, and may be lower but in no case higher than valves shown in Tables 1 and B1.

3.2 The temperature shown for the corresponding rating shall be the metal temperature of the pressure retaining parts. It shall be assumed that the metal temperature will be the temperature of the contained fluid. Use of a pressure rating at a metal temperature other than that of the contained fluid shall be the responsibility of the user.